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THE

ONTARIO WATER RESOURCES

COMMISSION

WATER POLLUTION SURVEY

of the

POLICE VILLAGE OF PORT LAMBTON

TOWNSHIP OF SOMBRA

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POLICE VILLAGE OF PORT LAMBTON  
- 1966  
(TOWNSHIP OF SOMBRA)

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Report on a water pollution  
survey of the police village of  
Port Lambton in the township of  
Sombra - county of Lambton.

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THE  
ONTARIO WATER RESOURCES COMMISSION

REPORT ON A

WATER POLLUTION SURVEY

of the

POLICE VILLAGE OF PORT LAMBTON

in the

TOWNSHIP OF SOMBRA - COUNTY OF LAMBTON

DIVISION OF SANITARY ENGINEERING.

1966

WATER POLLUTION SURVEY  
POLICE VILLAGE OF PORT LAMBTON

INTRODUCTION

A water pollution survey of surface water drains, storm sewers, and private drains within the Police Village of Port Lambton, was conducted on March 17, and 29, 1966.

Mr. R.E. Bradshaw, Clerk, Township of Sombra, provided information pertinent to the survey. Mr. W.J. McGee, Township Councillor, assisted in the investigation and sampling programme.

GENERAL

The Village of Port Lambton with an assessed population of 548 (1965 Municipal Directory) is located along Highway No. 40 on the east shore of the St.Clair River, approximately eight miles north-west from the Town of Wallaceburg, and 22 miles south of the City of Sarnia.

General drainage from the area flows into the St.Clair River. Local drainage is provided by municipal drains, storm sewers, and private drains, all of which discharge into the St.Clair River watercourse.

Septic tank systems are utilized on most properties for the treatment of domestic sanitary sewage. A few privies are also in operation.

The water pollution survey, as conducted, consisted of the locating of municipal and private surface water drains and storm sewers, and an investigation including the sampling of each to determine the level of pollution being discharged into the water-course from the Village area.

The sanitary chemical analyses and the bacteriological examination results of samples collected from the municipal and private drains are tabulated in tables 1 and 2 respectively. The location of sampling points are designated on the accompanying map by mileage distances from the mouth of the St.Clair River.

#### INTERPRETATION OF LABORATORY ANALYSES

For convenience in the interpretation of laboratory analyses and bacteriological examinations, the Ontario Water Resources Commission objectives for water quality pertaining to surface-water drains, and storm sewers are as follows:

5-day BOD (Biochemical Oxygen Demand)  
- not greater than 15 ppm (Parts per Million)

Suspended Solids  
- not greater than 15 ppm ( Parts per Million)

Coliform Organisms ( Membrane Filter Method)  
- not greater than 2400 per 100 millilitres

Anionic Detergent.  
- The presense of anionic detergent in waters generally indicates pollution from domestic sources.

### SIGNIFICANCE OF LABORATORY ANALYSES

By comparing the laboratory analyses of samples collected from the municipal surface water drains (Table 1) with the objective figures for water quality, it is readily noted that the waters in all drains examined, with the exception of one (SC12.00) are grossly polluted. Attention is especially directed to the excessive pollution being discharged from the Princess St. drain (SC12.62). The outfall from this drain is located only a few feet upstream from the Port Lambton water works intake. The coliform counts and the anionic detergent concentrations indicate that domestic wastes and sanitary sewage are the probable sources of the polluting materials.

This condition may be attributed directly to the illegal practice of permitting the discharge of untreated or inadequately treated wastes into the municipal surface water drains. These drains in turn discharge into the St.Clair River and contribute to pollution in the watercourse.

It was noted during the survey that private drains extend from many properties along the east side of River Drive. These drains are installed under River Drive (Highway No.40) and outfall into the St.Clair River. It is assumed that the drains were permitted to be installed by the municipality for the purpose of surface water drainage. However, on examination of water samples collected from eight outfalls (Table 2), water quality in only one

conformed to the water quality objectives. High levels of contamination were present in all other drain waters. The laboratory analyses indicated that sanitary sewage was the probable source of the pollution.

It is therefore concluded that untreated and inadequately treated domestic wastes are being discharged into many of these private surface-water drains.

#### SUMMARY

A water pollution survey was conducted in the Police Village of Port Lambton on March 17 and 29, 1966.

A high level of pollution in almost all municipal surface water drains examined was noted (Table 1).

The extremely high coliform counts and the high concentrations of anionic detergent indicate inadequately treated sanitary and other domestic wastes to be the major sources of the pollution.

Inadequately treated domestic sewage is being discharged illegally into private surface-water drains which in turn discharge into the St. Clair River (Table 2). These drains extend from properties along the east side of River Drive (Highway No. 40).

#### RECOMMENDATIONS

In order to control local sanitation, and as a measure in pollution abatement and control, the following recommendations are presented.

1. A pollution abatement programme should be instituted for the Village of Port Lambton. Such a programme should include



the installation of a system of sanitary waste collection sewers and an adequate method of waste treatment.

2. In the event that the institution of sewerage works is not feasible, it will then be required that the municipality takes immediate measures to ensure that all private drains which discharge inadequately treated wastes to any surface-water drain, or watercourse, are located and severed. This action will then require each property owner to provide an approved system for the adequate treatment of his own wastes.

Approved by

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J. M. Timko, P. Eng.,  
District Engineer,  
Division of Sanitary Engineering.

Prepared by:

J.K. Ferris.

bh

TABLE I

VILLAGE OF PORT LAMBTON - WATER POLLUTION SURVEY

MUNICIPAL SURFACE WATER DRAINS - OUTFALLS TO ST. CLAIR RIVER

<u>Sampling Point No.</u>	<u>Description of Sampling Point</u>	<u>5-Day BOD (ppm)</u>	<u>S O L I D S Total (ppm)</u>	<u>Susp. (ppm)</u>	<u>Diss. (ppm)</u>	<u>Anionic Detergent as ABS</u>	<u>Coliforms per 100 ml Membrane Filter</u>
SC 12.00	at South boundary of Village - Conc. 6 - S.S.(Storm Sewer)	1.4	672	17	655	0.2	30
SC 12.36	Down's Drain at William St. - S.S.	17.0	648	21	627	3.7	7,800,000
SC 12.41	Hill St. - S.S.	OUTFALL SUBMERGED					
SC 12.46	Broadway Road S. Side - S.S.	56.0	674	26	648	5.6	190
SC 12.47	Lambton Line Drain North Side of Broadway Rd. - S.S.	OUTFALL SUBMERGED					
SC 12.52	John St. - S.S.	61.0	374	30	344	2.3	54,000,000
SC 12.57	Stoddart St. - S.S.	14.0	570	4	566	1.6	25,000
SC 12.62	Princess St. - S.S.	150.0	1676	786	890	6.8	12,000,000
SC 12.67	Queen St. - S.S.	2 OUTFALLS SUBMERGED			1 OUTFALL NO FLOW		

TABLE I (Continued)

VILLAGE OF PORT LAMBTON - WATER POLLUTION SURVEY

MUNICIPAL SURFACE WATER DRAINS - OUTFALLS TO ST. CLAIR RIVER

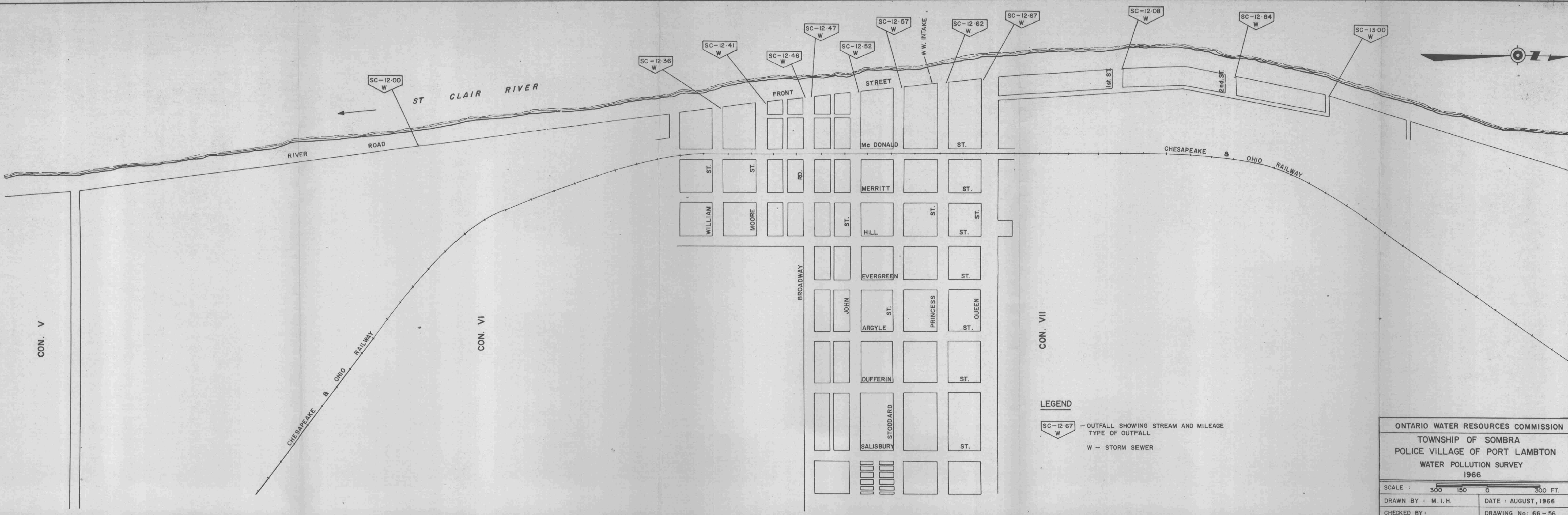
<u>Sampling Point No.</u>	<u>Description of Sampling Point</u>	<u>5-Day BOD (ppm)</u>	<u>S O L I D S</u>			<u>Anionic Detergent as ABS</u>	<u>Coliforms per 100 ml Membrane Filter</u>
			<u>Total</u>	<u>Susp.</u>	<u>Diss.</u>		
			<u>(ppm)</u>	<u>(ppm)</u>	<u>(ppm)</u>		
SC 12.96	Galerno Drain at Second Street.	3.2	464	8	456	0.1	26,000
SC 13.00	Merrill Drain at Gibson Lane.	17.0	658	48	610	2.0	82,000
SC 12.84	First St. - S.S. from Recreation Park Area.	35.0	834	39	795	21.2	100,000

TABLE II

VILLAGE OF PORT LAMBTON - WATER POLLUTION SURVEY

PRIVATE DRAINS - OUTFALLS TO ST. CLAIR RIVER

<u>Sample Number</u>	<u>Location of Drain Outfall</u>	5-Day BOD (ppm)	<u>S O L I D S</u>			Anionic Detergent as ABS	Coliforms per 100 ml <u>Membrane Filter</u>
			<u>Total</u> (ppm)	<u>Susp.</u> (ppm)	<u>Diss.</u> (ppm)		
1	Opposite abandoned school between Second St. and Gibson Lane.	4.8	1108	3	1105	0.1	0
2	Opposite 89 River Drive North.	9.2	634	12	622	0.1	250,000
3	Opposite 77 River Drive North.	76.0	544	54	490	0.4	380,000
4	Opposite 73 River Drive North.	3.8	660	3	657	0.1	660
5	Opposite 49 River Drive North.	205.0	658	92	566	7.0	138,000,000
6	Opposite 18 River Drive North.	590.0	1296	526	770	12.5	29,000,000
7	Opposite 54 River Drive South.	35.0	526	25	501	0.35	640,000
8	Opposite 68-72 River Drive South.	5.6	972	138	834	0.2	6,000



LEGEND

- SC-12-67 W - OUTFALL SHOWING STREAM AND MILEAGE TYPE OF OUTFALL
- W - STORM SEWER

ONTARIO WATER RESOURCES COMMISSION

TOWNSHIP OF SOMBRA

POLICE VILLAGE OF PORT LAMBTON

WATER POLLUTION SURVEY

1966

SCALE : 300 150 0 300 FT.

DRAWN BY : M.I.H.      DATE : AUGUST, 1966

CHECKED BY :      DRAWING No: 66-56